

CLAIMS

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) A transmitting apparatus comprising a transmitting device for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data, comprising:

managing means for managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting means for detecting a change of the hierarchical structure of the directory managed by said managing means and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries, the second difference information being the difference of leaf entries; and

first transmitting means for transmitting said first difference information[,]
at first predetermined time cyclically;

second transmitting means for transmitting said second difference
information at second predetermined time cyclically; and

third transmitting means for transmitting third difference information for
reproducing the hierarchical structure of the directory at a third predetermined
time period; independent of said first difference information and said second
difference information;

~~the wherein said third predetermined time period being~~ is variably
designated in accordance with operating state information collected by
monitoring operating states of at least one of a receiving side.

5. (Original) The transmitting apparatus as set forth in claim 4, wherein the predetermined time period is designated corresponding to chronological variation information of the operating state of the receiving side.
6. (Original) The transmitting apparatus as set forth in claim 4, further comprising:
 - communicating means for communicating with the receiving side, wherein said communicating means receives the operating state information from the receiving side.
7. (Original) The transmitting apparatus as set forth in claim 4, wherein the third difference information is composed of information of only container entries of the hierarchical structure of the directory.
8. (Original) The transmitting apparatus as set forth in claim 7, wherein the predetermined time period is a time period that is a multiple of the time period of which the first difference information is transmitted.
9. (Original) The transmitting apparatus as set forth in claim 4, wherein the third difference information is composed of information of only leaf entries in the immediately lower hierarchical level of each of container entries.
10. (Original) The transmitting apparatus as set forth in claim 9, wherein the predetermined time period is a time period that is a multiple of the time period of which the second difference information is transmitted.
11. (Previously Presented) A transmitting method, comprising the step of:
 - transmitting the same contents of update information a plurality number of times, the update information representing that data has been updated,

wherein the transmission timing of the same contents of the update information transmitted at the transmitting step is predetermined in accordance with operating state information collected by monitoring operating states of at least one receiving means that receives the update information from said transmitting means.

12. (Original) The transmitting method as set forth in claim 11, wherein the transmitting method is a method for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data, the method comprising the steps of:

managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting a change of the hierarchical structure of the directory managed at the managing step and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries, the second difference information being the difference of leaf entries; and

transmitting third difference information for reproducing the hierarchical structure of the directory at a predetermined time period along with the first difference information and the second difference information,

wherein the predetermined time period is variably designated corresponding to the operating state information of a receiving side.

13. (Original) A receiving apparatus for receiving a hierarchical structure of a directory for hierarchically managing the locations of contents data that is transmitted, comprising:

receiving means for receiving first difference information, second difference information, and third difference information, the first difference information being obtained by detecting a change of container entries, the second difference information being obtained by detecting a change of leaf entries, the directory being composed of container entries and leaf entries, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry not containing information in the immediately lower hierarchical level thereof, the third difference information being transmitted at a predetermined time period, the third difference information being capable of reproducing the hierarchical structure of the directory; and

managing means for managing the hierarchical structure of the directory formed corresponding to the first difference information, the second difference information, and the third difference information received by said receiving means,

wherein local operating state information of the receiving apparatus is monitored and transmitted.

14. (Original) The receiving apparatus as set forth in claim 13, further comprising:

communicating means for communicating with a transmitting side that transmits the third difference information,

wherein said communicating means transmits the operating state information to the transmitting side.

15. (Original) The receiving apparatus as set forth in claim 13, wherein the predetermined time period is designated on the transmitting side that transmits the third difference information corresponding to the operating state information.

16. (Original) The receiving apparatus as set forth in claim 13,

wherein the third difference information is composed of information of only container entries of the hierarchical structure of the directory.

17. (Original) The receiving apparatus as set forth in claim 16,
wherein the predetermined time period is a time period that is a multiple of the time period of which the first difference information is transmitted.

18. (Original) The receiving apparatus as set forth in claim 13,
wherein the third difference information is composed of information of only leaf entries in the immediately lower hierarchical level of each of container entries.

19. (Original) The receiving apparatus as set forth in claim 18,
wherein the predetermined time period is a time period that is a multiple of the time period of which the second difference information is transmitted.

20. (Original) A receiving method for receiving a hierarchical structure of a directory for hierarchically managing the locations of contents data that is transmitted, comprising the steps of:

receiving first difference information, second difference information, and third difference information, the first difference information being obtained by detecting a change of container entries, the second difference information being obtained by detecting a change of leaf entries, the directory being composed of container entries and leaf entries, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry not containing information in the immediately lower hierarchical level thereof, the third difference information being transmitted at a predetermined time period, the third difference information being capable of reproducing the hierarchical structure of the directory; and

managing the hierarchical structure of the directory formed corresponding to the first difference information, the second difference information, and the third difference information received at the receiving step,

wherein local operating state information of the receiving apparatus is monitored and transmitted.

21. (Previously Presented) A transmitting and receiving system, comprising:
transmitting means for transmitting the same contents of update information a plurality number of times, the update information representing that data has been updated; and

receiving means for receiving the update information transmitted by said transmitting means,

wherein the transmission timing of the same contents of the update information transmitted by said transmitting means is predetermined in accordance with operating state information collected by monitoring operating states of at least one receiving means that receives the update information from said transmitting means.

22. (Original) The transmitting and receiving system as set forth in claim 21, wherein the transmission timing is a time zone in which the update information is transmitted.

23. (Original) The transmitting and receiving system as set forth in claim 21, wherein the transmission timing is a time period of which the update information is transmitted the plurality number of times.

24. (Previously Presented) The transmitting and receiving system as set forth in claim 21,

wherein the transmitting and receiving system is a system for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data and receiving the transmitted hierarchical structure, comprising:

first managing means for managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting means for detecting a change of the hierarchical structure of the directory managed by said first managing means and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries corresponding to the detected result, the second difference information being the difference of leaf entries;

transmitting means for transmitting third difference information for reproducing the hierarchical structure of the directory at a predetermined time period along with the first difference information and the second difference information;

receiving means for receiving the first difference information, the second difference information, and the third difference information transmitted by said transmitting means; and

second managing means for managing the hierarchical structure of the directory formed corresponding to the first difference information, the second difference information, and the third difference information received by said receiving means;

wherein the predetermined time period is variably designated corresponding to the operating state information of a receiving side that receives the third difference information transmitted by said transmitting means.

25. (Original) The transmitting and receiving system as set forth in claim 24, wherein the predetermined time period is designated corresponding to chronological variation information of the operating state of the receiving side.
26. (Original) The transmitting and receiving system as set forth in claim 24, further comprising:
communicating means for communicating with a transmitting side that transmits the third difference information to the receiving side,
wherein said communicating means transmits the operating state information from the receiving side to the transmitting side.
27. (Original) The transmitting and receiving system as set forth in claim 24, wherein the third difference information is composed of information of only container entries of the hierarchical structure of the directory.
28. (Original) The transmitting and receiving system as set forth in claim 27, wherein the predetermined time period is a time period that is a multiple of the time period of which the first difference information is transmitted.
29. (Original) The transmitting and receiving system as set forth in claim 24, wherein the third difference information is composed of information of only leaf entries in the immediately lower hierarchical level of each of container entries.
30. (Original) The transmitting and receiving system as set forth in claim 29, wherein the predetermined time period is a time period that is a multiple of the time period of which the second difference information is transmitted.

31. (Previously Presented) A transmitting and receiving method, comprising the step of:

transmitting the same contents of update information a plurality number of times, the update information representing that data has been updated; and
receiving the update information transmitted at the transmitting step,
wherein the transmission timing of the same contents of the update information transmitted at the transmitting step is predetermined in accordance with operating state information received at the receiving step.

32. (Original) The transmitting and receiving method as set forth in claim 31, wherein the transmitting and receiving method is a method for transmitting a hierarchical structure of a directory for hierarchically managing locations of contents data and receiving the transmitted hierarchical structure, the method comprising the steps of:

managing a hierarchical structure of a directory composed of a container entry and a leaf entry, a container entry containing information in the immediately lower hierarchical level thereof, a leaf entry being disposed in the immediately lower hierarchical level of a container entry, a leaf entry not containing information in the immediately lower hierarchical level thereof;

detecting a change of the hierarchical structure of the directory managed at the first managing step and obtaining first difference information and second difference information corresponding to the detected result, the first difference information being the difference of container entries corresponding to the detected result, the second difference information being the difference of leaf entries;

transmitting third difference information for reproducing the hierarchical structure of the directory at a predetermined time period along with the first difference information and the second difference information;

receiving the first difference information, the second difference information, and the third difference information transmitted at the transmitting step; and

managing the hierarchical structure of the directory formed corresponding to the first difference information, the second difference information, and the third difference information received at the receiving step,

wherein the predetermined time period is variably designated corresponding to the operating state information of a receiving side that receives the third difference information transmitted at the transmitting step.